

NOTES ON SOME SOUTHERN CALIFORNIAN ORTHOPTERA.

BY JAMES A. G. REHN, PHILADELPHIA.

The following specimens were collected at San Diego, California, during the year 1901 by Mr. G. W. Dunn, and are now in the collection of the Academy of Natural Sciences of Philadelphia. The terms used in the descriptions are those adopted by Comstock and Kellogg in their recent work, "Elements of Insect Anatomy."

Family MANTIDÆ.

LITANEUTRIA OBSCURA, Scudder.

One immature male, November 13, 1901.

Family PHASMIDÆ.

SERMYLE ARBUSCULA.* n. sp.

Type, ♀; San Diego, California, May 7, 1901.

This species does not seem to be very closely related to any of the previously-known species of the genus. From *azteca*, Saussure, it is differentiated by having the femora carinate and striate; from *Saussurii*, Stal, by the non-ampliate sixth abdominal segment; and from *strigata*, Scudder, by the more robust limbs and the less strongly striate body. With *Mexicana* and *linearis*, Saussure, no affinity exists.

General form slender, the thoracic portion rather robust. Head rather elongate, bearing two central longitudinal rugæ, which become obscure caudad, the whole surface of the head rather tuberculate, the tubercles being longitudinally disposed; eyes subspherical, slightly exserted; antennæ longer than cephalic femora, the proximal segment large and broad, with the distal section contracted, this segment over twice as large in bulk as the next. Pronotum, mesonotum and metanotum tuberculate, the tubercles resolving into longitudinal series, this being more apparent on the metanotum, the mesonotum and metanotum being centrally carinate; pronotum rather narrow, not quite equalling the head in length; mesonotum long (with pronotum equalling the cephalic femora), the lateral margins slightly tuberculate; metanotum very considerably shorter than the mesonotum, comparatively robust, expanding in the caudal portion. Abdomen rather slender, multistrigate, none of the segments exhibiting any special ampliation; ventral surface between the sixth and seventh segments exhibiting a pair of flattened longitudinal processes. Cephalic femora heavy, with the proximal diastema (found in

*In relation to the twig-like appearance of the insect.

many representatives of this family) rather well marked, the remaining section of the segment being inflated and with three prominent angles; tibiæ as long as the femora, quadrate, slightly tapering; first tarsal joint about as long as the succeeding ones. Intermediate femora short, triangular in section, equalling the metanotum (and median segment) in length; tibiæ depressed, about equalling the femora in length; first tarsal joint considerably less than the succeeding joints in length. Caudal femora short, reaching the middle of the third abdominal segment, roughly triangular in section; tibiæ rather longer, reaching to the apex of the first segment. General colour reddish brown, washed with ashy gray on the cephalic limbs.

Measurements :

Length of body	54 mm.
Length of pronotum	3 "
Length of mesonotum	12 "
Length of metanotum (with median segment).	8.7 "
Length of abdomen	28 "
Length of cephalic femora	14 "
Length of intermediate femora	7.5 "
Length of caudal femora	8.7 "

Family ACRIDIDÆ.

ARPHIA RAMONA, n. sp.

Types: ♂ and ♀; San Diego, California, April 4 (♂) and 30 (♀), 1901.

Allied to *A. Behrensi*, Saussure, but much larger, with the pronotal carinæ slightly arcuate and very slightly incised; the frontal costa is suddenly constricted superiorly and not tapering, while the posterior margin of the pronotum is rectangular, with the angles more or less rounded instead of acute angulate. With *nietanna*, Saussure, the species needs no comparison.

♂. Size rather small. Head with the fastigium gently rounded, merging into the frontal costa with a slightly perceptible angle; vertex decidedly longer than broad, rather deeply excavated, the lateral margins subacuminate cephalad; frontal costa decidedly constricted dorsad, rather broad ventrad, slightly expanded at the ocellus, the dorsad section bearing a central low ridge, broadly sulcate at and ventrad to the ocellus; eyes sub-elliptical, equal to the ventro-ocular portion of the genæ; antennæ short, slightly expanded distad. Pronotum rugose, moderately

expanded caudad; cephalic margin obtuse-angulate, caudal margin rectangular; median carina rather low, slightly arcuate, very slightly incised; lateral lobes subquadrate, rugose on the metagonal portion, cephalic and caudal margins parallel, ventral margin obtusely trimmed cephalad. Tegmina rather long, considerably exceeding the hind femora, broadly rounded proximad. Posterior femora stout, with prominent dorsal and ventral keels.

General colour blackish-brown, the dorsal aspect of the tegmina with a longitudinal bar of brownish ochraceous; abdomen dull yellow; posterior tibiae deep cobalt blue, with a lighter subproximal ring, spines black.

♀. Size large. Head with the vertex cordiform, the cephalic portion completely closed; frontal costa considerably constricted superiorly, subequal at and below the ocellus, supplementary intermediate ridge subobsolete; eyes elliptical, considerably shorter than the ventro-ocular portion of the genæ; antennæ moderately long, slightly expanded distad. Pronotum essentially as in the male. Tegmina rather long, slightly exceeding the body, considerably exceeding the hind femora. Wings rather large, equal to the tegmina in length.

General colour grayish brown, the tegmina sprinkled with spots of darker brown, giving a "salt-and-pepper" appearance to the latter parts; outer face of the posterior femora obscurely washed with hoary; posterior tibiae ultramarine blue with a sub-proximal ring of dull pinkish, the spines black. Wings with the disc and the greater part of the cephalic margin reddish orange, the ulnar stigma and the periphery dull blackish brown, the distal portion of the humeral field smoky hyaline.

Measurements :	♂.	♀.
Length of body	22.5 mm.	37.5 mm.
Length of pronotum	5 "	7.5 "
Length of tegmina	22 "	32 "
Length of hind femora	13 "	19 "

The total number of specimens of this species examined was eleven—four males, seven females.

ARPHIA HESPERIPHILA, n. sp.

Types : ♂ and ♀; San Diego, California, April 4 and October 30, 1901.

Allied to *A. arcta* and *A. conspersa*, Scudder, but distinguished from the former by the higher pronotal crest, by the more robust posterior femora, the shorter ulnar stigma, and the more definite wing arc; from

conspersa it is distinguished by the sub-rotundate vertex, the more uniformly-coloured pronotum, and the colour of the disc of the wings and of the hind femora.

♂. Size very small (for this genus). Head rugulose; vertex elongate, rather deeply excavated, fastigium foveolate; frontal costa constricted dorsad, gently expanded ventrad, shallowly sulcate in the vicinity of the ocellus; eyes slightly prominent, elliptical, not equalling the ventro-ocular portion of the genæ; antennæ short, distal section gradually enlarged. Pronotum rugose on the prozona, punctate on the metazona, slightly constricted centrally; cephalic margin finely obtuse-angulate, caudal margin rectangulate; median carina moderately high, arcuate on the prozona, narrowly cut by the transverse sulcus; lateral carina marked in the metazona, obscure and sinuous on the prozona; lateral lobes deep, the ventral margin sinuate cephalad. Tegmina rather long, distal extremity truncate. Caudal femora heavy, genicular region only slightly enlarged. General colour wood brown, varied and sprinkled with black; the distal portion of the tegmina black, which tint also suffuses the pleuræ and genicular lobes and outer face of the caudal femora; caudal tibiæ ultramarine blue, the genicular portion black, the usual proximal ring greenish white.

♀. Size small. Head with the fastigium shallowly foveolate; frontal costa expanded at the ocellus, shallowly sulcate in the portion cephalad to this point; eyes rather small, considerably smaller than the infra-ocular portion of the genæ. Pronotum with cephalic margin of the lateral lobes subarcuate.

General colour wood brown, the genicular portion of the caudal femora suffused with blackish, which tint also forms several indistinct transverse bars on the tegmina. Wings with the disc sulphur yellow; the arc pale blackish brown, not evanescent and not reaching completely around the caudal margin of the wing or to the anterior margin, stigma short, cephalic margin obscurely with blackish brown distad, proximal area (except the above-mentioned margin) hyaline.

Measurements:

	♂.	♀.
Length of body	14 mm.	22.5 mm.
Length of pronotum	3.5 "	4.7 "
Length of tegmina	16 "	19.5 "
Length of hind femora	9.5 "	11.5 "

Five specimens examined, two males, three females.

CHIMAROCEPHALA PACIFICA (Thomas).

Three females ; March 23 and 24, and April 10, 1901.

STICTHIPPIUS CALIFORNICUS (Scudder).

Two females ; June 14 and August 13, 1901.

An examination of these two specimens shows that *marmosatus*, Scudder (Psyche, VI., p. 318), is probably only a variation of this form, one of the specimens having the anal vein free on one tegmen and entangled on the other, this character being used by Scudder as a differential one, while the maculations of the tegmina seem of no greater value.

SPHARAGEMON VENUSTUM (Stal).

Four males and three females; May 18, 20, 25 and 28, and June 5, 1901.

These specimens have the hind tibiæ glaucous or dull lutescent instead of blue.

DEROTMEMA SAUSSUREANUM, Scudder.

One immature female and one male ; July 17, 1901.

CONOZOA BEHRENSI, Saussure.

Six specimens : four males, two females ; September 22 and October 3, 1901.

TRIMEROTROPIS REBELLIS (Saussure).

Trimerotropis cristata, Rehn (not of McNeill), Trans. Amer. Ent. Soc., XXVII., p. 333.

Four specimens: three males, one female ; April 14 and May 18 and 28, 1901.

TRIMEROTROPIS VINCULATA, Scudder.

Twenty-nine specimens : ten males, 19 females ; March 23, April 4, 11, 17, 22 and 30, May 9, 15, 18, 25, 28 and 31, June 5, July 25, and October 22 and 30, 1901.

HELIASTUS CALIFORNICUS (Thomas).

One female ; March 29, 1901.

DRACOTETTIX MONSTEROSUS, Bruner (?).

One immature female ; May 4, 1901.

This specimen differs somewhat from Bruner's figure of *D. monsterosus* (Proc. U. S. Nat. Mus., XII., pl. 1, fig. 1), mainly in the form